

Workshop: How to Find Our Nearest Neighbors  
Location: Leiden University, Leiden, the Netherlands  
Dates: Oct. 22-26/2012

Title: "Observables and Goals for Coronagraphic Characterization of Earth Analogs"

Presenter: Karl R. Stapelfeldt

Abstract:

On a suitably large and stable telescope, direct coronagraphic imaging can make numerous important measurements of terrestrial exoplanets. Astrometric timeseries observations will be of primary importance: Only when the planet orbital elements are known can 1) the effects of the planet's illumination phase and astero-centric distance be accounted for in the observed planetary fluxes, and 2) the planet's location relative to the habitable zone be established. Planetary colors and spectra will allow characterization of the planet's atmosphere and possibly even its surface, while time-variable fluxes may indicate surface contrast features or seasonal changes. Imaging will also reveal the context of other planets and dust belts in the system, both of which can affect habitability. Requirements on astrometric precision, number of visits, and telescope aperture will be discussed.